Appl. No. 09/966,064
Amdt. dated October 12, 2004
Reply to Office action of August 13, 2004

REMARKS/ARGUMENTS

The receipt of the Office action dated August 13, 2004 is hereby acknowledged. In that action the Examiner rejected claims 1-22 as allegedly obvious over Esfahani (US Patent No. 6,434,695).

With this response, Applicants amend claims 1, 10-18 and 21. Reconsideration is respectfully requested.

I. AMENDMENTS TO THE SPECIFICATION

With this response, Applicants present a plurality of amendments to the specification. The amendment to paragraph [0001] is to supply the serial number of the co-pending case, and to remove the attorney docket number. The amendments to paragraphs [0003], [0023] and [0041] are to correct grammatical and typographical errors. Finally, the amendment to paragraph [0040] is to eliminate any interpretation of what one of ordinary skill in the art may have known prior to reading the current specification. No new matter is added.

II. CLAIM REJECTIONS

A. Claim 1

Claim 1 stands rejected as allegedly obvious over Esfahani. Applicants amend claim 1 to remove limitations not needed to define over the cited art.

Esfahani is directed to a computer operating system using a compressed read only memory (ROM) image in random access memory (RAM). (Esfahani Title). In particular, Esfahani is directed to a computer operating system (OS) where a portion of the operating system is stored as a compressed image in RAM and only the low-level, hardware-specific code, is stored in a boot ROM. (Esfahani Col. 2, lines 54-61). Esfahani apparently breaks the OS into these two components to reduce the size of the ROM and therefore associated computer system cost, and to reduce the amount of testing required when low-level changes are made.

> The low-level portion, which includes hardware-specific code, is stored in a relatively small Boot ROM, while at least a part of the intermediate level portion is store as a compressed ROM image on a disk or other mass storage device.

(Esfahani Col. 2, lines 57-60).

> In addition, the memory footprint may be reduced, since fewer patches may be required as the higher-level software is consolidated and unchanged. ... Today, RAM and disk space are inexpensive, have high capacity, and are fast compared to the ROM, RAM and disk in the original Macintosh.

(Esfahani, Col. 4, lines 66-Col. 5, line 6).

> Referring to FIG. 4, in the improved OS, the low-level (hardware-specific) OS code 31 resides in firmware, in order to handle start-up activities of the computer system. This code fits into one, relatively small ROM, referred to as the Boot ROM 11.

(Esfahani, Col. 5, lines 7-11). As correctly noted in the Office action of August 13, 2004, "Esfahani does not explicitly teach the OS drivers are read from the ROM during installation of an operating system."

Claim 1, by contrast, specifically recites "a read only memory (ROM) coupled to the CPU, where the ROM stores a first set of basic input output system (BIOS) programs and further where the ROM stores a first set of operating system drivers; and wherein at least one operating system driver of the first of operating system drivers is read from the ROM during installation of an operating system for the computer system." As admitted by the Office action, Esfahani is not concerned with installation of an operating system; but rather, Esfahani is apparently only concerned with booting of an operating system that is previously installed. Moreover, Esfahani appears to be directed to reducing the number of programs and thus the size of the system ROM, and therefore teaches away from increasing the number of programs stored on a system ROM, such as adding OS drivers used during installation.

Based on the foregoing, Applicants respectfully submit that claim 1 is not rendered unpatentable by Esfahani, and should be allowed together with all claims which depend from claim 1 (claims 2-9).

B.   Claim 2

Claim 2 stands rejected as allegedly obvious over Esfahani.

Claim 2 specifically recites, "said first set of BIOS programs associated with the first set of operating system drivers; a second set of BIOS programs; and a second set of the operating system drivers associated with the second set of BIOS programs." Applicants respectfully submit that Esfahani teaches away from

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having multiple BIOS programs and multiple sets of operating system drivers by teaching that a smaller footprint ROM is desirable. (Esfahani Col. 4, line 6-Col. 5, line 6).

Claim 2 is allowable for at least the same reasons as Claim 1 from which it depends, as well as the additional limitations therein.

C.   Claim 9

Claim 9 stands rejected as allegedly obvious over Esfahani.

Claim 9 specifically recites, "wherein the ROM further comprises an electrically erasable programmable read only memory (EEPROM); and wherein the EEPROM stores two substantially identical copies of the BIOS programs after installation of the operating system." Esfahani does not teach, suggest or even imply that a ROM device should initially store a first set of BIOS programs and a first set of operating system drivers (claim 1), and after installation of the operating system comprise "two substantially identical copies of the BIOS programs ... ."

Claim 9 is allowable for at least the same reasons as claim 1 from which it depends, as well as the additional limitation therein.

D.   Claim 10

Claim 10 stands rejected as allegedly obvious over Esfahani. Applicants amend claim 10 to remove much of the wording from the preamble, and to more clearly define over the system of Esfahani.

Esfahani is directed to a computer operating system using a compressed ROM image in RAM. (Esfahani Title). In particular, Esfahani is directed to a computer operating system where a portion of the operating system is stored as a compressed image in RAM and only the low-level, hardware-specific code, is stored in a boot ROM. (Esfahani Col. 2, lines 54-61). Esfahani apparently breaks the operating system into these two components to reduce the size of the ROM and therefore associated computer system cost, and to reduce the amount of testing required when low-level changes are made. (Esfahani Col. 2, lines 57-60; Col. 4, lines 66-Col. 5, line 6; Col. 5, lines 7-11). As correctly noted in the Office action of August 13, 2004, "Esfahani does not explicitly teach the OS drivers are read from the ROM during installation of an operating system."

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Claim 10, by contrast, specifically recites "storing in the ROM hardware drivers for a plurality of operating systems." Esfahani appears to be directed to reducing the size of the system ROM and thus teaches away from "storing ... hardware drivers for a plurality of operating systems."

Based on the foregoing, Applicants respectfully submit that claim 10 is not rendered unpatentable by Esfahani, and should be allowed together with all claims which depend from claim 10 (claims 11-15). The preambles of claims 11-15 are amended in view of the amendments to claim 10, and not to define over any prior art.

E.   Claim 14

Claim 14 stands rejected as allegedly obvious over Esfahani.

Claim 14 specifically recites, "copying one or more hardware drivers from the EEPROM; erasing the hardware drivers from the EEPROM after the one or more hardware drivers have been copied; and flashing a second BIOS program to the EEPROM in place of the hardware drivers." Esfahani does not teach or suggest that once hardware drivers have been copied that a second BIOS program should be flashed In place of the hardware drivers.

Claim 14 is allowable for at least the same reasons as claim 10 from which it depends, as well as the additional limitations therein.

F.   Claim 16

Claim 16 stands rejected as allegedly obvious over Esfahani. Applicants amend claim 16 to remove much of the terminology from the preamble, and to more clearly define over the system of Esfahani.

Esfahani is directed to a computer operating system using a compressed ROM image in RAM. (Esfahani Title). In particular, Esfahani is directed to a computer operating system where a portion of the operating system is stored as a compressed image in RAM and only the low-level, hardware-specific code, is stored in a boot ROM. (Esfahani Col. 2, lines 54-61). Esfahani apparently breaks the operating system into these two components to reduce the size of the ROM and therefore associated computer system cost, and to reduce the amount of testing required when low-level changes are made. (Esfahani Col. 2, lines 57-60; Col. 4, lines 66-Col. 5, line 6; Col. 5, lines 7-11). As correctly noted in the Office

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action of August 13, 2004, "Esfahani does not explicitly teach the OS drivers are read from the ROM during installation of an operating system."

Claim 16, by contrast, specifically recites, "supplying an operating system driver during the installation of an operating system by copying the operating system driver from a read only memory (ROM) device comprising a basic input output system (BIOS) and operating system drivers for a plurality of operating systems." The Office action admits that Esfahani fails to teach "OS drivers are read from the ROM during installation of an operating system." Applicants further submit that Esfahani fails to teach that the ROM should contain operating system drivers for a plurality of operating systems. Given that Esfahani is apparently directed to reducing the size of the ROM and making the memory footprint smaller, Esfahani teaches away from the limitations of claim 16.

Based on the foregoing, Applicants respectfully submit that claim 16 is not rendered unpatentable by Esfahani, and should be allowed together with claim 17 which depends from claim 16. The preamble of claim 17 is amended in view of the amendment to claim 16, and not to define over any prior art.

G.   Claim 18

Claim 18 stands rejected as allegedly obvious over Esfahani. Applicants amend claim 18 to remove limitations that are not needed to define over the prior art, and to more clearly define over Esfahani.

Esfahani is directed to a computer operating system using a compressed ROM image in RAM. (Esfahani Title). In particular, Esfahani is directed to a computer operating system where a portion of the operating system is stored as a compressed image in RAM and only the low-level, hardware-specific code, is stored in a boot ROM. (Esfahani Col. 2, lines 54-61). Esfahani apparently breaks the operating system into these two components to reduce the size of the ROM and therefore associated computer system cost, and to reduce the amount of testing required when low-level changes are made. (Esfahani Col. 2, lines 57-60; Col. 4, lines 66-Col. 5, line 6; Col. 5, lines 7-11). As correctly noted in the Office action of August 13, 2004, "Esfahani does not explicitly teach the OS drivers are read from the ROM during installation of an operating system."

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Claim 18, by contrast, specifically recites, "wherein the ROM further comprises: a redundant portion; a non-redundant portion; wherein the redundant portion of the ROM stores the first set and a second set of BIOS programs; and wherein the non-redundant portion of the ROM stores operating system drivers for a plurality of operating systems; wherein at least one of the operating system drivers is read from the ROM during the installation of an operating system for the computer system." The Office action admits that Esfahani does not teach that "OS drivers are read from the ROM during installation of an operating system." Applicants further submit that Esfahani fails to teach or suggest that the ROM device should comprise operating system drivers for a plurality of operating systems. In fact, given that Esfahani apparently teaches reduction of the size of the ROM and a smaller memory footprint, Esfahani teaches away from the limitations of claim 18.

Based on the foregoing, Applicants respectfully submit that claim 18 is not rendered unpatentable by Esfahani and should be allowed together with claim 19 and 20 which depend from claim 18.

H.   Claim 21

Claim 21 stands rejected as allegedly obvious over Esfahani. Applicants amend claim 21 to remove much of the terminology of the preamble.

Claim 21 specifically recites, "dividing an electrically erasable programmable read only memory (EEPROM) into a redundant and non-redundant portions; storing in the redundant portion of the EEPROM a first set of basic input output system (BIOS) programs and a second set of BIOS programs; and storing in the non-redundant portion of the EEPROM operating system drivers." Esfahani does not teach or suggest redundant and non-redundant portions of an EEPROM, and further Eshagani does not teach or suggest that BIOS programs should be in a redundant portion while operating system drivers are in a non-redundant portion.

Based on the foregoing, Applicants respectfully submit that claim 21 is not rendered unpatentable by Esfahani and should be allowed together with claim 22 which depends from claim 21. Applicants amend the preamble of claim 22 to match the preamble of claim 21, and not to define over any prior art.

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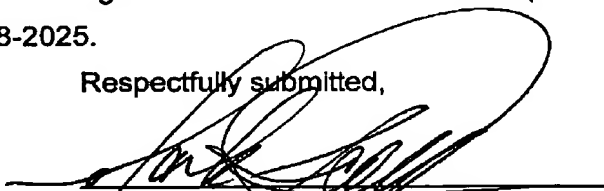
III.   CONCLUSION

Applicants respectfully request reconsideration and allowance of the pending claims. If the Examiner feels that a telephone conference would expedite the resolution of this case, he is respectfully requested to contact the undersigned.

In the course of the foregoing discussions, Applicants may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the cited art which have yet to be raised, but which may be raised in the future.

Applicants respectfully request that a timely Notice of Allowance be issued in this case. It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper.

In the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's Deposit Account No. 08-2025.

Respectfully submitted,

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